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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,358	01/11/2002	Beng S. Ong	D/A1332	6793

7590 11/26/2003

Patent Documentation Center  
Xerox Corporation  
Xerox Square 20th Floor  
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Rochester, NY 14644

EXAMINER
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KIELIN, ERIK J

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 11/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/042,358

Applicant(s)

ONG ET AL.

Examiner

Erik Kielin

Art Unit

2813

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 8 and 36-41 is/are pending in the application.
- 4a) Of the above claim(s) none is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8, 36 and 37 is/are allowed.
- 6) ☒ Claim(s) 39-41 is/are rejected.
- 7) ☐ Claim(s) 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 17 November 2003 (Paper no. 20) has been entered.

### ***Double Patenting***

2. Claim 38 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 8. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 39-41 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,347,144 (**Garnier et al.**).

Regarding independent claim 1, **Garnier** discloses an electronic device (a thin film transistor or TFT), comprising a substrate, gate electrode (called "conducting grid"), gate dielectric, and source/drain electrodes (col. 2, lines 20-29; col. 6, lines 19-47) and a semiconductor layer comprising a polythiophene derived from monomer segments shown in col. 4, line 35 to col. 5, line 21, labeled as formula "(III)." **Garnier** discloses the polythiophene of formula (III) shown in col. 4, to have the following substituent groups:

X and X' independently represent O, S, Se, Te, or --N(R)--,

R represents H, alkyl, substituted alkyl, aryl, or substituted aryl;

R<sub>1</sub>, R<sub>2</sub>, R'<sub>1</sub>, R'<sub>2</sub>, R'<sub>3</sub>, and R''<sub>3</sub> each independently represent --H, Cl, F, or a --CF<sub>3</sub>, --NO<sub>2</sub>, --CN, --COOR<sub>3</sub> group, --N(R<sub>4</sub>)(R<sub>5</sub>), alkyl, substituted alkyl, aryl, substituted aryl, alkoxy or polyalkoxy,

R<sub>3</sub> represents an alkyl or substituted alkyl group or a metal,

R<sub>4</sub> represents H or an alkyl or substituted alkyl group,

R<sub>5</sub> represents an alkyl, acyl, or aryl group or R<sub>1</sub> and R<sub>2</sub> and/or R'<sub>1</sub> and R'<sub>2</sub> pairs together represent a divalent hydrocarbon group which may be unsaturated or possibly interrupted and/or terminated by at least one heteroatom,

Y, Y<sub>1</sub>, Y<sub>2</sub>, and Y<sub>3</sub> independently represent the following groups: --C(R')=C(R'')-- --C≡C-- --N(R')-- --N=N-- --C(R')=N-- --N=C(R')--, wherein R' and R'' independently represent --H, alkyl, substituted alkyl, aryl, or substituted aryl,

a, b, a', b' are numbers equal to 0 or 1, or Y<sub>1</sub> may also represent a cyclic or heterocyclic arylene group, and in this case b=1 and a'=0,

s and t are whole numbers, including zero, of which at least one is different from zero,

m' is a whole number equal to at least 1, the numbers s, t, and m' are such that

$m' (s+t) = m$ ,

m being a whole number between 4 and 24.

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In the oligomer with formula III, units A and A' can alternate regularly or not. In addition, in a given oligomer, the substituents and/or heteroatoms of the units can be different.

In the instant case, monomers A and A' in **Garnier** are the equivalent of the instantly claimed  $R_m$ -substituted and unsubstituted thiophene monomers of the instantly claimed formula (I). The sidechains  $R_1$ ,  $R_2$ ,  $R'_1$ ,  $R'_2$ , in **Garnier** are equivalent to the instant sidechain  $R_m$ , because any of  $R_1$ ,  $R_2$ ,  $R'_1$ ,  $R'_2$  may be hydrogen or the non-hydrogen substituents, as indicated above. Any of Y to  $Y_3$  in **Garnier** corresponds to the A monomer of the instant formula (I). Only one of the subscripted Y's or Y is required since a, a', b, and b' may be zero.

Regarding claims 40 and 41, R (one of  $R_1$ ,  $R_2$ ,  $R'_1$ ,  $R'_2$ , in Garnier) may be alkyl containing from about 4 carbon atoms to about 10 (instant claim 40) or be butyl, hexyl, heptyl or octyl, i.e. from 4 to 8 carbons, respectively (instant claim 41) because "alkyl" is defined as the hydrocarbon groups. The remaining substituents may be hydrogen.

#### *Allowable Subject Matter*

5. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 36 and 37 are allowed.

The following is a statement of reasons for the indication of allowable subject matter, as repeated from the Office action filed 29 July 2003:

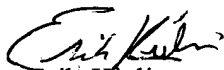
The prior art does not teach or suggest, in combination with the other claimed limitations, an electronic device having the polythiophene of the formula (I) of claim 1 wherein the R sidechain is a siloxyalkyl of trimethylsiloxyalkyl or triethylsiloxyalkyl.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik Kielin whose telephone number is 703-306-5980. The examiner can normally be reached on 9:00 - 19:30 on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached at 703-308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
Erik Kielin  
Primary Examiner  
November 25, 2003